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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-----------------------|---------------------|------------------|
| 10/092,394  | 03/05/2002  | Ioannis Katsavounidis | INTV.016A           | 8443             |
| 4586  | 7590        | 01/20/2006            | EXAMINER            |                  |
| ROSENBERG, KLEIN & LEE<br>3458 ELLICOTT CENTER DRIVE-SUITE 101<br>ELLICOTT CITY, MD 21043 |             |                       | AN, SHAWN S         |                  |
|   |             |                       | ART UNIT            | PAPER NUMBER     |
|   |             |                       | 2613                |                  |

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                      |  |
|------------------------------|------------------------|----------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>  |  |
|                              | 10/092,394             | KATSAVOUNIDIS ET AL. |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>      |  |
|                              | Shawn S. An            | 2613                 |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-15,24 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 3-15 is/are allowed.
- 6) ☒ Claim(s) 24 and 26-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Amendment*

1. As per Applicants' instructions as filed on 1/09/06, claim 24 has been amended, and claims 2, 16-23, 25, and 29-30 have been canceled.

### *Response to Remarks*

2. Applicants' arguments with respect to the amended claim 24 has been carefully considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 24 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (6,118,817) in view of Gardos et al (5,737,537).

**Regarding claims 24 and 26**, Wang et al discloses a method of determining which portions of video sequence are to be intracoded, comprising:

calculating a RMS value for a first portion of the video sequence (frames including a first frame) (Fig. 10, 1002; col. 17, lines 22-37);

calculating a first absolute difference value for a first portion of the video sequence (Fig. 5, 502);

determining if the first RMS value meets a first criterion (Fig. 10, 1006); and

determining if the first absolute (pixel) difference value meets a second criterion (Fig. 5, 506); and

causing an intracoding operation to be performed at least partly in response to the first and the second criteria being met (Fig. 6, 608).

Wang discloses substantially all of the claimed inventive features with the exception(s) of utilizing mean absolute difference (MAD) value to determine if the first MAD value meets a second criterion, and determining if the first MAD value is a local maximum.

However, computing (determining) such as absolute difference value, MAD values, and SAD values are conventionally known values as statistical (error calculating) measure values for each block. Furthermore, a SAD value divided by 256 is equal to a MAD value.

Moreover, Gardos et al teaches two measure (SAD, MAD values) block classification scheme (empty, inter, intra blocks) for encoding video images, comprising utilizing a MAD value to determine if the first MAD value meets a criterion (MAD < threshold), and determining if the first MAD value is a local maximum (a local measure of MAD) (abs.) for providing a block classification scheme that is computationally inexpensive and achieves low bit rate and high image quality (col. 1, lines 34-40).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing Wang's reference to incorporate the concepts as discussed above as also taught by Gardos et al so that Wang utilizes a mean absolute difference (MAD) value to determine if the first MAD value meets the second criterion, and determine if the first MAD value is a local maximum, thereby causing an intracoding operation to be performed at least partly in response to at least two of the first criteria, the second criteria, and the local maximum value as an efficiently alternative method in order to provide a block classification scheme that is computationally inexpensive and achieves low bit rate and high image quality.

**Regarding claims 27-28**, GOP and GOV terms are conventionally well known terms used in a video encoder.

GOP – group of pictures/frames (encoded order starts with an I picture and ends with picture immediately before the next I-picture in the video sequence).

GOV – group of video plane layers (similar to GOP).

Therefore, it would have been quite obvious to include a first GOP and/or GOV as the first portion of the video sequence.

***Allowable Subject Matter***

5. **Claims 1, 3-4, and 9-12** are allowed.

6. **Claims 1 and 3-4** include novel features of a method of detecting a scene change in a digital video sequence having a plurality of frames, comprising:

a method of detecting a scene change in a digital video sequence having a plurality of frames, comprising:

calculating a first color weighted root means squared (RMS) value for a first frame to a second frame, and the second frame to a third frame,

calculating a first mean absolute difference (MAD) value for the first frame relative to the second frame (Fig. 1, 1);

determining if the first color weighted RMS value meets a first criterion;

determining if the first MAD value meets a second criterion; and

designating the second frame as a scene change frame at least partly in response to

determining that both the first color weighted RMS value meets the first criterion and the first MAD value meets the second criterion, wherein the art of records fail to anticipate or make obvious these novel features (emphasis added on underlined limitations).

**Claims 9-12** include novel features a method of detecting a scene change in a digital video sequence, comprising:

calculating a second temporal derivative RMS value for a first frame relative to a second frame, and the second frame relative to the third frame; and

based at least partly on the second derivative value, determining that the frame is a scene change frame, wherein the art of records fail to anticipate or make obvious these novel features (emphasis added on underlined limitations).

Accordingly, if rejected claims are canceled, the application would be placed in a condition for allowance.

7. **Claims 5-8 and 13-15** are allowed as having incorporated the allowable subject matter as discussed in the last office action.

**claims 5-8 and 13-15** recite novel features, wherein the art of records fail to anticipate or make obvious the novel features.

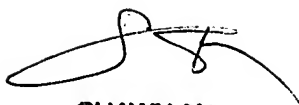
### ***Conclusion***

8. Applicant's amendment (including previous amendment filed 7/19/05) still necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn S. An* whose telephone number is 571-272-7324.

10. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**SHAWN AN**  
**PRIMARY EXAMINER**

1/18/06